CLAIMS

1. A system for making and digitally editing a composite image, for example a picture card, with a face of a user incorporated therein, comprising substantially, arranged in a housing casing (7):
- a central computer (13),
- a video acquisition panel (16),
- a monitor (17),
- a video-camera (18),
- a banknote reading device (21),
- printing means (19),
- a lighting device (22),
- a loudspeaker (23),
- a presence sensor (26) adapted to detect the presence of persons or objects movable through the taking field of the video-camera (18),
- signaling, communication or radio means (28, 29) arranged between the system and a shop keeper controlling the system,
which can be power supplied by electric power and which operatively interact by operating sequences which can be controlled by software programs or modules;
wherein the video-camera (18) takes images with a free taking field, or with "multichromatic" and "dynamic" outer backgrounds,
said system further comprising an outer PLC (24) operatively coupled to said central computer (13), banknote reading device (21), lighting device (22), presence sensor (26), and radio means (28, 29).

2. A system according to Claim 1, characterized in that said system further comprises a visual signaling device, e.g. a directional LED (27), mounted on said housing casing (31) on a side of said monitor (17), in such a position that, as a user instinctively directs

his/her face toward said energized directional LED, as attracted thereby, said user face will be properly seen by said video-camera (18) or displayed on said monitor (17), said direction LED (27) being coupled to said outer PLC (24), and in which a loudspeaker (23) is further mounted on a side of said LED (27), to operate as a directional loudspeaker for properly automatically locating said user face.

3. A system according to Claim 1, characterized in that said printing means (19) comprise a single printer (19), said printer (19) being preferably adapted to be power supplied respectively by one of a plurality of power suppliers of different size printing paper media, and provided for different printed products, e.g. cards (3) and "special products" (Figures 23 to 26).

4. A system according to Claim 1, characterized in that said printing means (19) comprise a plurality of printers (19), a number whereof corresponds to a number of said different printing paper media for a different products which can be printed by said system, e.g. said cards (3) and "special products" (Figures 23 to 26).

5. A system according to Claim 1, characterized in that said system further comprises a functional-operating architecture comprising the following operating software modules or programs cooperating with one another and controlling the associated components of the system (13, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27) as follows:

- a Module A, for example (TheMask.exe), or a user-system interface, displaying on said screen (17) different options to be selected by the user, communicating to the system the selections performed by the user and supplying corresponding graphics animations;

- a Module B, e.g. (Core.exe), which, through said video acquisition panel (16), captures the images generated by the video-camera (18), and converts the input video signal by transforming it into an ordered sequence of pixel constituting the mathematics expression of all the geometric patterns present in the considered image, said software Module B extrapolating the image of the "subject" (6) from the "background-subject assembly" (Figure 5C) and locating said image on the "view" (4) selected by the user, said extrapolation being performed by different analyses of the different chromatic equivalent area existing between a "first image", constituting a "reference background" (Figure 5B1) and a "second image" formed by the "background-subject assembly" (Figure 5C) as taken by the video-camera (18) with a free taking field;
- a Module C1;C2, for example (BackIni.exe; BackBuild.exe.), which, if the presence sensor (26) does not detect movements of objects in the taking field of the camera (18) within a presettable time, causes said camera (18) to take an encompassing outer environment or "taken background" (Figure 5B),
- a Module D, for example (Mailer.exe), which sends all the messages to the different components of the system, and, more specifically, between the user interface, Module A, "TheMask.exe", and the module B, "Core.exe", during the acquisition by the video-camera (18), and with the outer PLC (24) for controlling the lighting device (22) and the operations of the banknote reading device (21) and with the printer (19), thereby controlling a proper printing process, all the message exchange between the Module D, "Mailer.exe" and the Module B, "Core.exe" occurring through the Registry of the computer (13), the message flow being a bidirectional message flow,
- a Module E, for example (Golem.bin), which is arranged in the outer PLC (24) and controls the "timers" and presence sensor (23) actuating and allowing the taking of the "taken backgrounds",

turning said lighting device (22) on as said "subject" is taken, operating said loudspeaker (23) and communicating to the computer (13) an amount introduced into the banknote reading device (21).

6. A system according to Claim 2, characterized in that said directional "LED" (27), is operatively controlled by the module D, or Mailer.exe and by the outer PLC (24).

7. A method for making and digitally editing a composite image, for example a card with a face of a user incorporated therein, by a system according to Claim 1, comprising the following steps, actuated by said user and performed by the components (13, 16, 17, 18, 19, 21, 22, 23, 24, 26, 27) and software modules (A, B, C1, C2, D and E) of the system:
a) selecting, by said user, a "view" (4) among a plurality of prestored "views" and reproducing said view on said screen (17),
b) selecting, by said user, an insertion position for said "subject" (6) on the "view", among a plurality of different positions shown on said screen (17),
c) performing by the camera (18), controlled by said user, a taking step d) for taking a "background-subject assembly" thereon a following cropping step e) for cropping the "subject" will be then performed,
characterized in that:

in said step d) for taking the "background-subject assembly" the taken background is an instantaneous real background of the free taking field of the video-camera (18), or a "multichromatic" and "dynamic" background,

in that said cropping step e) is carried out by processing two images, i.e. a "first image", which is constituted by the image taken by said video-camera as said system is turned on, or by the "background taken without the subject", which, for improving said

cropping step, is virtually processed to provide a "reference background", and a "second image", formed by said "background-subject assembly" of said step d),

that said method further comprises the following steps, in part known per se:

a refining or trimming step f) for trimming the contour of the "subject" (6) insulated by the "background" thereof;

a subject translating step g) wherein the cropped subject (6) is translated to a preselected region of the "view" (4), said subject (6) being embedded in said "view" (4) by a physical replacement, pixel by pixel, of the pixels of said preset region of said "view" (4) with said pixel of said "subject" (6),

and an optional caption or wording insertion step h), for inserting captions or wordings (32) into said composite image (3, in Figure 3), and

a following printing step i) for printing said composite card (3), and

in that, as the system is turned on, a self-updating cyclic step j) is carried out for self-updating said "taken background", said self-updating cyclic step j) having a duration of substantially 180 sec, and in that a shorter cyclic attention step h) for the presence sensor (26) is furthermore carried out, said cyclic attention step having, for example, a duration of 30 sec, and wherein, if the free shooting field of said video-camera (18) is traversed by a person, an animal or an object - with a consequent introduction of their "new" image with respect to the "taken background", then the presence sensor (26) attention cycle is reinitialized.

8. A method according to Claim 7, characterized in that said step j) for self-updating said "reference background" (Fig. 5B1) is carried out in a plurality of working files (back0, back1, back2, back3, back4, back5), which form a "time queue" of said working

store, wherein the previous "reference background" image present in the first working file (back0) is displaced to the following working file (back1) and so on from file to file progressively with a reverse displacement (from back1 to back2; from back2 to back3; from back3 to back4; from back4 to back5), wherein, moreover, the "reference background" image held in the last working file (back5) is suppressed (Figures 11 to 14).

9. A method according to Claims 7 and 8, characterized in that, for providing the "first image" or virtual, valid "reference background" used in the following cropping two-image step e), in said working file Back0) said respective "taken background" (Fig. 5B) is stored, wherein

between the image held in the first working file (Back0) and the preceding images held in the other working files (from Back1 to Back5), the chromatic similitudes of the pixels arranged at the same locations are searched and, if for each pixel of the working file (Back0) a corresponding twin pixel is found in at least two images of the previous working files (from Back1 to Back 5), then said pixel in said first working file (Back0) is held as valid, otherwise said pixel being replaced (in Back0) by the latest twin pixel of the "reference background", i.e. of the image in the working file (Back1) (Figure 12).

10. A method according to Claim 7, characterized in that said "reference background" or "first image" is updated, as the "background-subject assembly", for the area of the background not covered by the "subject", is taken, while for the part covered by the "subject" it is recovered from the latest "reference background", i.e. from the image in the working file (Back1) (Figures 13, 13A).

11. A method according to Claim 7, characterized in that, for carrying out said cropping step e) the following steps are performed:
- a step l) of displacing said pixels from the "background" subject assembly" (Figures 5C),
- a step m) of displacing said pixels from said "reference background" (Figure 5B1),
- a step n) of carrying out a first differential analysis on a chromatic base,
- a step o) of carrying out a second differential analysis, also on a chromatic base,
- a step p) of boolean comparing for determining pixels to be preserved and pixels to be suppressed as present in two different working arrays, and
- a step q) of carrying out a third differential analysis on a colorimetric base.

12. A method according to Claim 9, characterized in that in said step l), said pixels of said "background-subject assembly" (Figure 5C) are shifted from the acquisition panel (16) buffer to a series of working arrays in a RAM memory, called ForeR, ForeG, ForeB, ForeN and ForeZ, now holding the foreground data, wherein the arrays ForeR, ForeG and ForeB hold therein the values of the chromatic components red, green and blue of the individual pixels, the array ForeN holds the markings for attributing said pixels of said "background-subject assembly" (Figure 5C), respectively to said "subject" or to said "background", wherein the array ForeZ will operate as a "tank" for temporarily transit or data related to the individual pixels.

13. A method according to Claim 11, characterized in that the step m) is carried out like the step n), wherein said pixels of said virtual "reference background" or "first image" (Figure 5B1) are

shifted to a series of working arrays called BackR, BackG and BackB, which hold now therein the data of the "second image" (Figure 5C, Back0) called "background".

14. A method according to Claim 11, characterized in that said first differential analysis step n) is based on the pixel isoareas among the arrays Fore and the arrays Back and is a cyclic function which can be automatically repeated up to a full analysis of all of the image pixels, wherein said analysis consists of collecting the foreground data in isoareas in which said pixels have a chromatic similitude, by analyzing the chromatic similitudes of adjoining pixels, wherein said analysis is spread in all directions the limits whereof are defined by a chromatic offset exceeding the parameters of a preset tolerance, wherein to the pixels of the isoarea a working color is attributed which is stored in a working array called "PointerFore", and corresponding to the average of the chromatic values of said isoarea, wherein the shape and position of the thus defined isoarea Fore (T1, Figure 15) is "projected" on the image present in the arrays Back (T2, Figure 15), and the average color obtained by the projection of the shape of the isoarea Fore on the array Back is stored in the working array called "PointerBack", wherein, moreover, as a result of this analysis based on a quantization of the image colors, two new working arrays "PointerFore" and "PointerBack", respectively holding herein a pair of the "background-subject assembly" or "second image" (Figure 5C) and a pair of the virtual "reference background" or "first image" (Figure 5B1) formed by the set of the isoareas identical for shape and position, but "leveled" or smoothed by the average of the colors of the respective sources are obtained.

15. A method according to Claim 11, characterized in that said second differential analysis step 0) is based on chromatic

isoareas of the arrays holding the image Fore and the arrays holding the image Back, wherein this function is operatively analogous to that of said step n), i.e. it extends in all directions, but with the difference that the isoareas are now defined independently both for the arrays Fore and for the arrays Back, the features consisting of the size and location of the isoarea, being compared in an independent manner for the two arrays, wherein, after the definition of said isoareas, if the size difference of the two isoareas Fore and Back is less than a preset value, for example 10%, then said isoareas are considered as similar since, being said isoareas present in both images, i.e. in the image "Background" and in the image "Foreground", then said areas pertain to the respective "background" but not to the "subject" of the "background-subject assembly" image (Figure 5C), wherein if a similitude is found, both said isoareas are forcibly recolored by a pure white color in both the arrays "PointerFore" and "PointerBack", thereby providing a further improvement of the result of the first differential analysis of said step n), those areas not affected by said first chromatic analysis being suppressed.

16. A method according to Claim 11, characterized in that in said comparing step p) a boolean comparing between the pixel which are present in said arrays "PointerFore" and "PointerBack" is carried out, wherein, for each pixel, the colorimetric values are read-out and, if said chromatic differences are contained with a given settable tolerance, then the pixel is marked in the array ForeN as "background" or as a supprimible pixel, otherwise said pixel being marked as a "subject" pixel, i.e. as a pixel to be preserved, wherein the information for each individual pixel related to the pertaining of said pixel to one of the two "background" or "subject" sets of said "background-subject assembly" or "second image" (Figure 5C) is stored in the array ForeN.

17. A method according to Claim 11, characterized in that the third differential analysis of the step q) is based on individual pixels between the arrays Fore and the arrays Back, wherein the image pixels present in said array Fore are individually compared to the "twin" pixel present in the array Back by a comparing based on a chromatic similitude on the single pixel pair, and on an offset of the color delta from the adjoining pixel, wherein, if the differences are held within a given settable tolerance range, then the two pixels are evaluated as suppressible, since they both pertain to the "background" of the "background-subject assembly" or "second image" (Figure 5C), and accordingly being marked as "background" inside said array ForeN, whereas, in a contrary case, no marking variation of the array ForeN is performed, thereby obtaining an image reflecting the cropped "subject" (6), with a provision of an amount of loose, insulated pixels, cutting corners and so on which, for an optimum "cropping" quality can be subjected to a further end cleaning/integrating multiple function processing.

18. A method according to Claim 17, characterized in that in said multiple function end processing of cleaning/integrating said image, are provided:

- two functions r) and rl) for suppressing "orphan" or insulated pixels,
- two functions s) and sl) for cleaning erroneous areas,
- a "trimming" function for trimming or filing the edges of the subject (6) and
- a soft function t) for harmonizing said subject (6) edges,

wherein, in addition to a continuing of the method for making composite cards (3), it is likewise possible to alternately continue the method for making said "special products".

19. A method according to Claim 18, characterized in that in the function r), said array Fore is analyzed and are searched the insulated pixels marked as pertaining to said "subject" and encompassed by pixels marked as pertaining to said "background", or by another pixel marked as "subject", wherein the pixels having these features are marked as pixels pertaining to said "background" and, accordingly, as suppressible.

20. A method according to Claim 18, characterized in that the function rl) is carried out as the function r), with the difference that are herein searched "background" pixels encompassed by "subject" pixels, wherein as this occurs, the function will close the "holes" in the "subject" by modifying the marking from "background" to "subject".

21. A method according to Claim 18, characterized in that in the step s), in said "subject" areas are searched adjoining pixel sets with a background marking to search their size, wherein, if said size is less than a given threshold, for example 2000 adjoining pixels, then the area is marked as "subject", wherein the searching method for establishing said area size is the all-direction searching method provided for said step n), and wherein all the image pixels are analyzed and the continuity of the adjoining regions of "background" pixels and "subject" pixels is verified.

22. A method according to Claim 18, characterized in that the step sl) is reversely performed from the step s), since said step sl) searches "subject" areas encompassed by "background" areas.

23. A method according to Claim 18, characterized in that said "filing" or trimming function t) allows to suppress "spike" pixels, i.e. those pixels projecting from the edges of the subject (6),

wherein this function is a recursive function and is performed, for example, three times.

24. A method according to Claims 18 to 23, characterized in that the function soft u) is performed for searching, for all the individual pixels of the "subject", the actual distance from the edge of said "subject" and, if said distance varies from 0 to 8 pixels, then to the pixel is applied a value defining the clearness of said pixel and, more specifically, with a strength which is reversely proportional to the distance of said edge, wherein said values are not immediately used, but interpreted at a subsequent time in a following merging step v) for merging the cropped "subject" (6) image and the preset view (4) image.

25. A method according to Claims 18 to 24, characterized in that, in continuing said method for making composite cards (1), at the end of said analysis/comparing and multiple-function final processing steps, in said merging step v) the surviving pixels of the image Fore, i.e. of said "subject" (6) are embedded by a physical replacement in the view (4) image, and that an harmonizing function w) for harmonizing the subject (6) edges with the adjoining pixels is moreover provided.

26. A method according to Claims 25, characterized in that in said harmonizing function w) for harmonizing said pixels along the subject (6) edges included in a distance of 0 to 8 pixels from the "subject" edge, to said pixel the following formula for each of the chromatic components of the "subject" pixels being applied:

$$C_t = \{ C_s * K + C_p(1-K) \}$$

where Ct is the value of the red, green or blue chromatic components, t is the value obtained by the applied clearness

correction, s is the "subject" pixel, p is a "view" pixel and K is a constant derived from the formula:

$$K = (D_r + 1)/D_t$$

where D is the unit distance expressed in pixels, r is the distance of the involved pixel from the edge, and t is the total distance affected by the clearness.

27. A method according to Claims 7 and 24, characterized in that after said "subject" (6) and "view" merging step v), an adding step x) for adding wordings or a caption (32) to the view (4) is optionally carried out, wherein said step x) adding said wordings (32) to said view (4) is analogous to said merging step v), and wherein, for defining the writing regions with respect to the non affected "background" regions, there is used the known "chroma-key" method, using, for example, as a discriminating color, the pure green.

28. A method according to Claim 7, characterized in that, after having formed the composite image (3), said image is saved on a disc, all the working arrays are disrupted, to the system the store assigned for managing the objects of the software operating modules (A, B, C1, C2, D, E) is recovered, and the 1-value is written in the system registry at the "Mainstreet/print" location, constituting the signal for the module D, "Postino.exe", that the file is ready, and the composite image (3) can be printed.

29. A method according to Claim 7 and one or more of Claims 8 to 24, for additionally making greeting cards, characterized in that as a "view" is introduced a view suitable for a greeting card, which has been prestored and can be selected by the user among a plurality of other prestored uses, wherein a caption or overlay according to the step h) of Claims 7 and 27 can be added, wherein,

at the end of the step soft u) of Claim 24, on said screen a display showing the photo of the face of the user inserted into the preselected "view", as well as the overlay also preselected by the user are displayed.

30. A method according to Claim 7 and one or more of Claims 9 to 24 for additionally making photo-cards and stickers, characterized in that the software operating module B, "Core.exe", saves an image in which the "subject" has been put on a "view" as a white, or other suitable color background, wherein the post-processing module F provides a form in which the printing format forming images are arranged, for example by providing 16 small images for said stickers or 4 or 6 larger images for said photo-cards, wherein, after forming the composite pattern composition, said composite pattern is sent to said printer.

31. A method according to Claim 7 and one or more of Claims 8 to 24 for making visiting cards, characterized in that, likewise to the method for making said greeting cards, a form for the layout preselected among a range of prestored layout is provided, wherein inside said layout there are arranged an image, which is the photo processed by the module B, "Core.exe", and a plurality of text cells representing the "vessels" provided for receiving the text keyed by the user, for example by using the virtual keypad on the touch screen (17), thereby, by touching one of the text fields, the keyed characters will fill in said field, wherein, to edit a further field, it said further field is simply touched on said screen, thereby addressing the input of said virtual keypad toward said other field, wherein, moreover, by pressing a confirmation field on the virtual keypad of the monitor (17), the layout will be duplicated into a series of copies, for example three copies, on another form holding the actual print size therein, and then said new form being sent to said printer.

32. A method according to one or more of Claims 7 to 31, for making composite cards or special products, characterized in that said method further comprises the step of sending said composite cards or special products to a receiving party through the internet, wherein the end bitmap is reduced to a size suitable for display on said screen and being converted into a JPG format, a form allowing to input data of the sending party, of the receiving party, as well as a short accompanying text, and then the assembly being integrated in a HTML codified page and sent onto the net by a modem and telephone, after having introduced into the casher the required money or amount for transmitting on internet, and as displayed on the screen.

33. A system according to the preamble of Claim 1, characterized in that said presence sensor is an optical presence sensor in the form of a software operating through the video-camera (18) of the system.

34. A system according to Claim 33, characterized in that said system further comprises a functional-operating architecture comprising the following operating software modules or programs cooperating with one another and controlling the associated components of the system (13, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27) as follows:

- a Module A, for example (TheMask.exe), or a user-system interface, displaying on said screen (17) different options to be selected by the user, communicating to the system the selections performed by the user and supplying corresponding graphics animations;
- a Module B, e.g. (Core.exe), which, through said video acquisition panel (16), captures the images generated by the video-camera (18),

and converts the input video signal by transforming it into an ordered sequence of pixel constituting the mathematics expression of all the geometric patterns present in the considered image, said software Module B extrapolating the image of the "subject" (6) from the "background-subject assembly" (Figure 5C) and locating said image on the "view" (4) selected by the user, said extrapolation being performed by different analyses of the different chromatic equivalent area existing between a "first image", constituting a "reference background" (Figure 5B1) and a "second image" formed by the "background-subject assembly" (Figure 5C) as taken by the video-camera (18) with a free taking field;

- a Module D, for example (Mailer.exe), which sends all the messages to the different components of the system, and, more specifically, between the user interface, Module A, "TheMask.exe", and the module B, "Core.exe", during the acquisition by the video-camera (18), and with the outer PLC (24) for controlling the lighting device (22) and the operations of the banknote reading device (21) and with the printer (19), thereby controlling a proper printing process, all the message exchange between the Module D, "Mailer.exe" and the Module B, "Core.exe" occurring through the Registry of the computer (13), the message flow being a bidirectional message flow,

- a Module E, for example (Golem.bin), which is arranged in the outer PLC (24) and turns said lighting device (22) on as said "subject" is taken, and communicates to the computer (13) an amount introduced into the banknote reading device (21),

wherein the control of the “timers” and the presence sensor which actuate and allow the taking of the “taken backgrounds” is preferably provided inside the modul “Mailer.exe”, and

wherein the loudspeaker (23) is operated by the central computer (13)

characterized in that it further comprises

- a Module C, for example (BackGenerator.exe) which on one hand replaces both modules (C1 and C2) BackIni.exe and BackBuild.exe of the previous application and on the other hand through the video-camera (18) is able to accurately discriminate the most important features related to the unchanged two-image cropping algorithm which is therefore a presence sensor without any physical reality.

35. A method according to Claim 7, characterized in that for verifying if disturbing persons or bodies are arranged before the system an optical presence sensor operating through the system video-camera and a dedicated software is used,
and in that it comprises the following steps:

a) two overshootings or images are remotely taken, for example, at 1 second from one another, by using the same video-camera of the system,

b) said two images are chromatically compared with respect to their pixels, i.e. each individual pixel of the first overshooting or image is measured and compared with the pixel at the same position of the second image,

c) if the chromatic difference is less than a preset given tolerance, then said pixel is judged as the same, otherwise said pixel being marked as different,

d) if, within the second image, the different pixels are less than a given tolerance (for example 200, with reference to a total pixel number of over 442,000 of the whole image), then it is judged that no variations of the two images have occurred and that, accordingly, before the video camera no persons or disturbing bodies or elements, such as casted shadows or light reflections are present,

e) if no disturbing person or element is arranged before the video camera, the system will switch the illuminating system on and will take two further images, spaced by 1 second from one another,

f) said two further images are also analyzed like as provided for in steps b), c) and d) to verify if, in the meanwhile, disturbing person or elements have entered the visual field of the video-amera,

g) in the case that a first and a second images are found equal, i.e. in the absence of disturbing persons or elements, the system switches the illuminating system off and stores the second images in the Back0 to Back5 files (figure 10), i.e. the sequence of the reference files which will be used for building the "virtual reference background" (figure 5B1), whereas

h) in the case that a first and a second images are found different, i.e. in the presence of disturbing persons or elements, then the system will continue to take overshootings or images, at a distance of 1 second from one another, while performing a comparing thereof as provided for in steps b), c) and d) untill a pair of or images is found without a difference greater than the provided tolerance (for example 200),

i) if, after a number of attempts, no "reference background" can be built, then the system will provide a signal, such as an acoustic signal or warning signal, and preferably open a window on the monitor showing a short message asking the persons near the video-camera to move away for allowing the system to properly operate,

j) as a subsequent pair of equal first and second images is detected, the system will switch off the lights, and the video-screen will preferably display a greetings message, thereby allowing the system to complete the last image storing operations.

36. A method according to Claim 35, characterized in that it comprises the following steps

k) after having performed the cropping, the virtual reference background (figure 5B1), is now caused to backward slip or slide by two positions (figure 40), together with all the old backgrounds, with

the exception of the Back5 background, which is now affected only by the BackGenerator.exe module, and accordingly by updated images, which operation occurred at a certain time, for example at 16.00 hours (figure 38),

l) later, for example at 16.15 hours, a subject overshooting operation for forming a card is performed and the image taken by the video camera is stored in the Back0 background, and the background interpolation () function is started which will summarily eliminate the subject areas, and then replace them by those areas arranged at the same position, coming from the Back1 background, whereby a reference virtual background (figure 5B1) is formed, in which the image portion not covered by the subject is updated at the overshooting time, whereas the portion "masked" by the subject must be recovered from a previous information (Back1~Back4), whereby said virtual reference background (figure 5B1) constitutes the image which will be used by the cropping algorithm in order to discriminate the "subject" areas from the "background" areas,

m) at the end of the cropping operation (figure 38), the Back4 image is eliminated, the Back3.bmp image is displaced into the Back4 image, the Back2 image is displaced into the Back3 image, and the reference virtual background (figure 5B1), (Back0), is displaced into the Back2 file, whereby

n) as a last operation, the image present in Back5 is copied into Back1, thereby providing an updated information for the next interpolating-background operation (figure 40).

37. A method according to Claims 35 and 36, characterized in that into the TheMask.exe module is provided for the client the possibility to take decisions related to the "card" and "greetings bill" products as novel printed format, that is of choosing for the end product among three patterns, for example among 1) an end product having the traditional so called "live printing" format, 2) an end

product with a frame shaped perimetrical edge, or 3) an end product with a frame shaped perimetrical edge and a caption at the bottom portion of the card, greetings bill or the like.

38. A method according to Claims 35 and 36, characterized in that into the TheMask.exe module is provided for the client the possibility as to the so-called "stickers" and "visiting bills or cards" to select if the photo pagination must be vertical (the commercial form) or horizontal.

39. A system of the type disclosed in Claim 33, characterized in that it is used in the surveillance and safety field, is simplified as stated in the following and comprises, arranged in a housing casing:
- a central computer (13),
- a video acquisition board (16),
- a monitor (17),
- a video-camera (18),
which can be power supplied by electric power and which operatively interact by operating sequences which can be controlled by software programs or modules of the type disclosed in claim 34, wherein the video-camera (18) takes images with a free taking field, or with "multichromatic" and "dynamic" outer backgrounds, wherein said system further comprises an optical presence sensor operating through the system video-camera (18) and software.

40. A method of the type disclosed in Claims 35 and 36, characterized in that it is used in the surveillance and security field, is simplified as stated in the following and comprises the following steps
A) a "sample image" is at first overshoot or "captured", for example at the safety system energizing moment,

B) said "sample image" is stored in the system as a "reference background" (figure 44),
C) under not-alarm conditions, i.e. in an intruder lacking condition, figure 44, the control monitor 43 (a single monitor being advantageously provided) of the video-camera/video-cameras, will provide the normal image taken through the environment, (figure 44), whereby with a cyclic frequency, for example of 3 seconds, the image supplied by the video-camera (figure 45) is automatically compared with the reference image (figure 44),
D) during the analyzing operation, all the shared and accordingly like areas are eliminated from the image, and it is controlled if are present remaining agglomerated pixels in more or less homogeneous areas (figure 46) i.e. areas which may represent a moving intruder person or body, not pertaining to the surveilled environment,
E) in affirmative case, i.e. if an intruder person or body is present, the background of the control monitor will preferably assume a contrasting color pattern, for example a red color, and on the monitor the areas different or extraneous from the reference image, for example the image of an intruder, will be stored, and
F) simultaneously, the image is stored together with the event hour and its place, for example the room access door area, so that the surveilling operator can immediately display the image of the intruder.

41. A system according to Claim 33, characterized in that the PLC is provided as an inner component.

42. Composite cards, greeting cards, photo-cards and stickers, visiting cards and the like, characterized in that they are made and printed by a systems and method according to one or more of the claims 1 to 38.